RURAL-URBAN INTERDEPENDENCY AND THE FUTURE OF AGRICULTURE

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In January of this year, in his Condition of the State Address, Governor Tom Vilsack of Iowa expressed concern about rural Iowans being pitted against urban Iowans. He said, "We cannot afford to be two Iowas. We are - and we must be - one Iowa (Vilsack, 2002)." An editorial in *The Des Moines Register* followed up Vilsack's comments by saying, "The existence of two Iowas – rural and urban – whose people do not recognize their common interests is the single biggest constant in Iowa politics (Doak, 2002)." Since moving to Iowa approximately two years ago from Seattle I have collected a folder of news articles and commentaries on this challenging and sometimes inflammatory issue. Here are a few examples of the topics from the Iowa folder: the costs of urban sprawl; the loss of the richest farmland in the world to development; a plea for regional land use planning to spread the costs of rural and urban services, the digital divide between rural and urban communities; the environmental and social costs of industrial agriculture and the decoupling of society from nature; the rural-urban split over local options sales tax for rural schools; fertilizer, sewage and manure contamination of lakes and streams; need for a state food policy to support locally grown food for urban consumers; a year-round farmers' market to bridge the rural-urban divide; community opposition to factory farms; and the amazing growth of suburbs and villages within commuting distance of city jobs. As I reviewed these in preparation for this presentation, I found that my Iowa folder was not too different from the folder I had created during my years in Seattle! These issues are clearly subjects of concern across different regions of the country.

Before coming to Iowa my vision of this state was of a beautiful rolling countryside dotted with well-kept rural family farms, the richest soil in the world, and "corn as high as an elephants eye" from border to border. Iowa is beautiful, and it does have wonderful soil, but my other assumptions have had to be modified. Like most states, Iowa is urbanizing, and even where the environment *looks* rural, I would contend that Iowa's culture, life style and economy is largely urban. Even though 39 percent of Iowa's population is defined by residence as rural (US ERS, 2002)[1], approximately 30 percent of that population is not directly involved in farming. If we consider the breadth of the food, fiber and agricultural system, today's agricultural system is embedded into a political, economic and cultural system that is driven largely by urban people and organizations. In Iowa, a so-called "rural farm state," most of the growth in the past decade has been concentrated in and around metropolitan areas. Almost 25 percent of the state's population resides in four counties (Dallas, Johnson, Linn, Polk) -- the Des Moines and Cedar Falls metropolitan areas. Dallas County (West Des Moines) increased by 37 percent during this period. Approximately 45 percent of Iowa's population is metropolitan.

The issue of urbanization and the implications for the future of agriculture has not been foremost in my thoughts until relatively recently. My own roots are rural, in fact my extended family still ranches 40 miles from a small city of 50,000 population in Alberta, Canada. As a young woman, my goal was to get enough education to enable me to work and live in a rural agricultural community. I had little interest in anything associated with city life. It wasn't until I returned to Seattle in the early 1980s, following a stint in Lesotho, Southern Africa --- a rural, agricultural nation quite dominated by South African metropolitan influences --- that I began to observe the myriad of agricultural activities in and around the

metropolitan areas, and their often subtle connections to rural places and people. I couldn't help but feel that our land-grant universities were missing a prime opportunity, partly because of the need to broaden the public support base, but also because agriculture, in all its burgeoning complexity, was becoming an "urban" phenomenon.

Purpose

The purpose of this paper is to discuss the interdependency between rural and urban areas drawing on agriculture as the common denominator. In doing so, I will discuss some of the ways in which the rural-urban system naturally intersects and overlaps, and why I believe we are missing some opportunities to reinforce and strengthen this long-term historical relationship. I will offer a plea for expanding our thinking about agriculture in the context of an urbanizing society. My position will be substantiated by drawing on information about current trends in metropolitan agriculture and by identifying some of the opportunities for applying agricultural knowledge and experience tothe challenges found in both rural and rural areas.

Some of the opportunities I will touch on include:

- ecosystem restoration and remediation,
- environmental and therapeutic horticulture,
- agricultural entrepreneurship,
- recreation and tourism, and
- planning healthy communities.

Viewing the interdependency between rural and urban areas as a *rural-urban agroecosystem* is a useful way to think about the organizational complexity and the ways in which all component parts interact with each other, and with the total system. Whether we consider problems like sprawl, loss of farmland, the need for civic capacity, or the digital divide, the interactions among economic, environmental and human factors provide more useful insights about key actors, relationships between issues, and location of needed resources. Innovative solutions to complex but interrelated rural-urban problems can be more clearly articulated when viewed as a whole, and have the potential of bringing more interests to the table. The synergy associated with the whole system can generate more clout, more excitement, more resources, and more creativity!

Lastly I will offer some suggestions about future program and policy opportunities for bridging the social, cultural and economic gap that seems to exist between rural and urban areas.

Rural-Urban Stereotypes and Images

There has been a long history associated with the separation of "town" life and "country" life. With this come the myths and stereotypes that accompany our mental images of what constitutes "rural" and "urban." We are all familiar with the romantic notion associated with nature, and how this is frequently extended to "rural" and "farming" or "ranching." Early American writers such as Ralph Waldo Emerson, Henry David Thoreau and Thomas Jefferson, were influential in shaping our views about the work ethic and equating farmers with the moral and political ideals of this country. Hard physical labor became a virtue for a successful life and democratic citizenship, and farmers were a symbol of this virtue because of their closeness to nature. More recent writers like Wendell Berry have moved us beyond equating farming with good citizenship, and have broadened the conception of farming and rural life as a part of our cultural heritage. Berry sees our society as becoming highly vulnerable as we move

away from a connectedness with the land and community and as we move toward an impersonal high technology lifestyle.

Rural and urban are often thought to represent contrasting lifestyles, with differing access to resources, power and money. Those of you who grew up with *Aesop's Fables*, said to date back to the time of the Egyptian pharaoh, Amasis, in the sixth century B.C., may recall the tale *of The City Mouse and the Country Mouse*. Depending on the particular version of this story, this ancient fable paints a vivid picture of the contrasting lifestyles between the two characters, and even alludes to the stereotypical attitudes that one has for the other's lifestyle. The city mouse presents his country cousin with bread, barley, beans, dried figs, honey, raisins and a delicious piece of cheese. The city mouse, plump and prosperous in his finely tailored suit, lives surrounded by luxurious carpets and woodwork. On a visit to the home of his country cousin, the city mouse is presented with a humble bed of dusty straw, and food consisting of sunflower seeds, dandelion greens, an apple core, walnut shells filled with fresh milk, and cornbread crumbs. As a more practical example, agriculture interest groups have historical connections to politicians, land-grant universities and government agencies. These networks have had direct consequences for tax entitlements, property rights and other regulations that challenge power relationships, influence government spending, and what research gets done. The history of these relationships tells us a lot about public attitudes concerning urban and rural.

In spite of the real and imagined differences between city and country, there has always been a direct connection between rural and urban places, and between the landscape and society. In American history, rural farming areas were seen as a source of grain, timber or animals for city people, and in turn rural people received merchandise and specialized goods they were unable to produce themselves. Rural places were (and still are in some cases) considered a place to recycle urban wastes. This interconnected system was really an interdependent ecosystem connecting farmers or producers and city people or consumers.

What is Happening in the City and in the Countryside?

Now I would like to focus on a few of the trends in rural and urban areas. First the terms *rural, urban, city* and *metropolitan* are problematic because of differing definitions that have been associated with them. In this paper, I plan to use the terms *urban* and *metropolitan* synonymously, and the same for *non-metropolitan* and *rural.* However, I consider a city as including its surrounding suburbs or urban fringe communities because they all are linked economically. This coincides somewhat with the Office of Management and Budget definition of a metropolitan area -- a county containing one or more central cities with a combined population of at least 50,000, and any other counties that are economically and socially linked to the central city/county. The word *metropolitan,* derived from the Greek language, means "mother city." The earliest use of the term refers to the "parent state of a colony." With this came the concept of being the primary center of some type of activity. The idea of *metropolitanism*, according to Rotenberg (2001) emerged in nineteenth century Europe as a way to preserve privilege for those in control of colonialism. Early metropolitan areas were dependent on capital from colonial economies in order to shape the physical space to reflect wealthy citizens' ideals of class, power, religious practice, and resource disposal. Urban space, and the way it was arranged, derived from a total population's social values and beliefs.

Something is clearly happening that could force rural and urban people to come together, unless, as Daniels (1999) suggests, the conflicting interests of the rural-urban fringe prove to be our next "land-use

battleground." More than 71 percent of U.S. rural counties gained population in the last decade, and this phenomenon is fairly widespread. This represents a 7.1 percent increase, or a total of 3.6 million people. During this same period, fewer rural people migrated to the cities, and more metropolitan residents moved to the country. Most of this change is attributed to migration, however the flexibility of transportation and computer technology are major contributors to this pattern (Johnson, 1999).

Clearly, the countryside is proving attractive to urbanites. In spite of this, America still is a metropolitan nation. Over 80 percent of Americans (226 million people) live in metropolitan areas. However, there are regional differences in the percentages of urban/rural populations. Metropolitan growth is more apparent in the south and west, and less so in the midwest and northwest where population declined (U. S. Census Bureau, 2000). Metropolitan population gains are closely tied to the factors of immigration and natural increase. Immigrants are more attracted to cities; they are younger; and they have more children (Johnson, 1999).

Historically agriculture has been a dominant force in society. Its impacts on our civilization are both positive and negative. On the plus side, it has contributed to population health, adding to the length of our lives, our abilities to master physical and mental tasks, and it has stimulated innovation beyond anything our ancestors might have imagined. With increased urbanization agriculture has expanded recreation and leisure by way of its association with scenic open space, wildlife habitats, parks and botanical gardens and golf courses. The science of agriculture, and indigenous innovations from around the world have added to the health of our soil and the protection of our environment, through such things as green manures, cover crops and poly-cropping systems, buffer strips along streams, reduced tillage practices, and rotational grazing systems for livestock. Interactions with farmers at farmers' markets, roadside stands and u-pick operations have helped to keep us in touch with our rural roots and the sources of some of our food. Those of us who dine at white-tablecloth restaurants, or purchase groceries at upscale grocery stores or natural food co-ops are aware of just how fine a product agricultural producers can provide. We can select naturally-raised pork from Iowa farms, salad greens from Vashon Island; organic goat cheese from New Mexico, California or Iowa; organic leeks, kale and zucchini from the Skagit Valley of Washington State; organic apples from Western Colorado or New York State; and free-range poultry from Wisconsin. And if you don't live near one of these unique sources of supply, internet access can bring these products right to your own home.

Agriculture has fundamentally altered our human, social and cultural relationships over the entire world. Agricultural innovation has allowed us to survive in a world of increasing population density and resource scarcity. However, mass food policies that favor quantity over quality have contributed to the destruction of indigenous food systems, the devaluation of local knowledge, loss of ecological diversity, and have sent countless rural people to the cities in search of a better life. Cheap food policies have put family farmers out of business and devastated the economies of rural communities. Our demand for higher crop yields and greater quantities of red meat has contributed to the pollution of waterways, loss of topsoil, and to the destruction of wildlife habitats and scenic places. Though the lessons have been difficult to swallow, I believe we have learned that producing more food does not necessarily alleviate hunger, nor does it build healthy and equitable communities. Even in America, farmers are the poorest people in the world. Most of the profit associated with the food business now flows to urban areas and food processors, distributors, and input suppliers -- not to farmers.

As the agriculture system expanded beyond farming into a more complex and far-reaching processing, manufacturing, distribution and consumption system, local and regional connections became less obvious. The numbers of participants in the system increased enormously, and the social and economic

distance between producer and consumer grew to the point that this relationship, for many people, has all but disappeared. Today rural areas are viewed as recreation areas for urban and suburban people, as sources of local, fresh, high quality produce, as a place from which to escape traffic congestion and asphalt-covered parking lots, and perhaps even more important, as a place for mental and spiritual renewal in close proximity to nature. Clearly, Americans are showing a preference for environmental quality and a more "rural" lifestyle.

While agriculture is usually perceived to be a rural phenomenon, this may be changing. Approximately 16 percent of the nation's best farmland is located in metropolitan areas, and that land produces one-quarter of the nation's food supply. Another fifth of the nation's best farmland is located in counties adjacent to metropolitan counties, and these counties contribute an additional third of total farm output. Small farms operated by part-time farmers have been steadily increasing in number, and now they make up over half of U.S. farms. In metropolitan fringe areas larger pieces of land are being broken into small parcels and more newcomers own land. Motivations for urban-edge land ownership has also shifted toward land ownership for a residence, a business or an investment as compared to the former pattern of being primarily a place for natural resource or farm use (Daniels, 1999). Heimlich and Anderson's (2001) study further substantiate this trend, indicating that farms in metropolitan total one-third of all U.S. farms, and they control 39 percent of all farm assets. About two-thirds of the total value of agriculture production takes place in or adjacent to metropolitan counties (USDA NRCS, 2001).

The changing profile of farmers is another factor to keep in mind. In addition to being largely part-time (about 37% in 1997), and older (54.3 years as of 1997), more than 15 percent of farmers and farm managers are women (compared to 4.5% in 1970). As well, the number of women in agricultural schools and agribusiness is growing; from 30-35 percent of the faculty in agriculture at land-grant universities are women (Tevis, 2001). While still proportionately small, America also has an increasing number of immigrant farmers. Between 1987 and 1997, the number of Latino-owned and operated farms increased by 40 percent (from 16,183 to 23,000). If present trends continue, according to USDA, the number is expected to reach 50,000 in 20 years with similar trends evident among some Asian immigrant groups (Pena, 2001).

Agriculture is a Common Denominator

Human beings have historically felt the need to be connected to plants and animals. As our society has moved away from the land into an increasingly urban lifestyle, there is increasing evidence of people's need to re-connect with natural places and all things that are symbolic of this ancient relationship -- pets, wildlife, indoor plants, wilderness and outdoor recreation, landscaping and gardening, farmers and ranchers, and locally produced food. Meeting this innate human need contributes to alleviating stress, improved mental and physical health and enhanced quality of individual and community life; these facts should send a clear message to those of us associated with agriculture.

How can agriculture help to bridge the great divide between rural and urban communities? If we broaden our perspective of what constitutes agriculture, and its role in the total rural-urban ecosystem, agriculture has the potential of enhancing *everyone's* physical environment, personal health and community well being. Part of our challenge is our own mind-set. As a start, we must move beyond agriculture's current focus on production and its association with rural areas alone. Our vision must include the challenges being faced by rural *and* urban areas, by colleges and universities not typically viewed as "agricultural," and by organizations and interest groups with which we have had little or no association.

Let us begin to imagine the potential of agriculture in this context. Agriculture has historically been a tool used by human beings to modify their environments. As Ikerd (1996) has clearly stated, humans, whether individually or collectively, are the only members of agroecosystems that are capable of self-conscious, intentional behavior. I must assume that we are therefore capable of collectively modifying rural-urban agroecosystems in ways that will improve the social, economic or ecological sustainability of the system. There is a vast storehouse of biophysical, technical, social and economic knowledge that has been accumulated through years of scientific and applied research, and there is a wealth of real world knowledge in waiting to be tapped in communities and organizations. Here are some of the problem areas to which our expertise might be applied:

Ecosystem restoration and remediation

The natural ecosystem provides an array of goods and services that are of direct benefit to society. Free services include raw materials production (food, fisheries, timber and building materials, genetic resources, etc.), pollination, biological control, habitats, water supply, waste recycling, nutrient recycling, soil building, disturbance regulation, climate and atmospheric regulation and recreation, to name just a few. Throughout our communities, there is ample evidence that ecosystems have been converted, degraded and fragmented to the point that future generation will not have access to the same natural goods and services from which we have benefited. Highly developed urban areas and intensely cultivated rural areas have been susceptible to the loss of natural habitats and plant, animal, insect and microorganism biodiversity. The following agricultural activities could help replenish and sustain ecosystems:

- storm water management,
- water remediation, waste-water reclamation and waster-water treatment,
- waste recycling
- composting,
- carbon sequestration, and
- bioremediation of brownfields (unused or idled industrial or commercial sites where contamination may occur)

Environmental and therapeutic horticulture

The indoor and outdoor plant industry, frequently found in metropolitan areas, has grown enormously in the past decade. This includes not only the “green industry” (retail garden centers, cut flower production and marketing, nurseries, greenhouses, interior-scaping, sod farms and landscape maintenance) but also the application of plants and trees to street-scaping, community improvement, human stress alleviation and other therapeutic uses. Although not always thought of as “agriculture,” environmental horticulture is firmly anchored in agricultural and horticultural sciences and has a very promising role to play in environmental and community restoration, in human psychotherapy, and in economic development. In addition to generating substantial income for a community or region, this activity is a major employer, and makes a significant contribution to tourism and recreation through parks, botanical gardens, green space, athletic fields and golf courses. Although not well documented, the human and community benefits of plants and flowers in built environments, densely populated area, along congested freeways and in shopping malls is obvious. Trees and shrubs offset extreme temperatures, prevent soil erosion, filter pollutants, and provide wildlife habitat. However, with opportunities come challenges. If not properly managed, use of plants and shrubs can lead to serious environmental and health problems through the use of too many chemicals and fertilizers, excessive demands on limited water supplies,

introduction of invasive species, and potential release of allergenic pollens. Increasing the use environmentally-friendly systems can contribute to the sustainability of both rural and urban areas, for example by emphasizing multi-cropping strategies, natural insect and disease control, water-conserving plants, alternative fertilizer sources, and indigenous species.

Agricultural entrepreneurship

Public demand for high quality, identity-preserved food and fiber products is increasing. Food retailing, especially in metropolitan areas, is undergoing what might be described as a revolution. North Americans are seeing, and demanding, more local, farm-based, value-added products. In response to increased concern about personal and environmental health, there has been a surge in demand for organic or "natural" products. U.S. sales of organic foods have grown 20 percent annually for the past decade, and it has become a 7.7 billion dollar business (Pollan, 2001). Customers are interested in higher quality, fresher and more flavorful products, and with recent threats of food contamination, are increasingly interested in the origin of their food. These trends are expanding the profit margins of full and part time producers, especially if they are located within commuting distance of a metropolitan area. Even if they are not, the use of the internet as a marketing tool is changing small to mid-sized farmers' market access dramatically. We are also seeing a significant change in the interest of farmers in learning more about customer demands, and in creating innovative marketing strategies. More farmers are entering into productive value chain alliances with other farmers, and with processors, distributors and retail outlets. For many, this represents a new venture, and one that entails some risk but also much excitement and optimism.

In every state there has been a proliferation of alternative retail outlets for farm products. These range from the well known farmers' market which has been around for some time, to community supported agriculture (CSA), farm-to-table programs, and various farmer alliance or value chain strategies. While there is some concern about the consistency of the numbers (see for example, Roth, 1999), it is clear that customer demand, and farmers' desire to retain a greater share of the food dollar, is driving the numbers upward. USDA (2001) estimates a 63 percent increase in farmers' markets between 1994-2000, putting the total number in 2000 at around 2,866. Approximately 19,000 farmers sold their produce at farmers' markets. Customers are generally willing to pay more for what they consider to be better quality products, and to support the "experience" of interacting with the farmer and his/her family. Farmers' markets add to local business revenue by serving as a draw to other establishments, and some, such as Seattle's Pike's Place Market, have become a major international tourist attraction.

CSAs have emerged in the last 15-18 years as a way for customers to purchase shares in a particular farm, and in return, be guaranteed a regular assortment of produce and/or other locally produced products. One estimate suggests there may be about 1000 CSA farms in the country (University of Wisconsin-Madison, 2001), however this may be an underestimate. CSAs are found in about 50 states in varying numbers. Although they seem to predominate in the Northeast, East and West Coast areas, they are steadily increasing in the Midwest region. Through their investment, customers share in the risk of the farm operation, and the producer acquires advance capital for operating. Another attraction of the CSA is the continuing relationship that is established between the customer and a particular farmer.

Farm-to-table programs connect producers directly with restaurants or institutions with food services such as schools, universities, conference centers, prisons and hospitals. This is another direct marketing strategy that accommodates customers' desire for local produce, supports local producers and ensures that more of the food dollar is retained in state. Organizations like Practical Farmers of Iowa and

University of Northern Iowa play the role of "broker" to link farmers and customer establishments. Iowa's Food Policy Council, established in May 2000, has recommended that the Governor set a state initiative in motion to increase institutional and tax-supported agencies' purchases of Iowa-produced food products.

Recreation and tourism

With increased affluence and the pressures of city life, farmers, ranchers and communities are discovering the economic and social benefits of recreation and entertainment farming. This may include hunting, bird watching, hiking, u-pick activities, boarding horses and horse-back riding, or family attractions like a "maize maze," a pumpkin patch, hayrides, gardening classes, dinner in the garden, music in the barn, or over-night accommodation. These attractions may or may not be combined with crop, animal or other "product" production. In some people's minds, this may not even constitute "agriculture," but for many, this type of diversification allows them to stay in farming, and to protect the land base. Heimlich and Anderson (2000) describe a recreational farms as "any farm with sales less than $10,000," and generally too small to generate sufficient family income without an additional off-farm source. Recreational farms in metropolitan areas comprise 16-18 percent of American farms. Within metropolitan areas, they make up 51-54 percent of farms and control 29-30 percent of farm sector assets and equity, and 14-17 percent of the land operated, however they generate very small returns particularly when compared to total U.S, farm sales. The same authors claim that these types of farms "have little viability as economic enterprises and are essentially a consumption activity that will become increasingly expensive… as urban development continues (Heimlich and Anderson, 2002:40). In contrast, "adaptive" or high value/niche farms, which have sales in excess of $10,000, or more than $500 per acre, are said to have more viability in the face of development pressures. Adaptive farms account for 13-14 percent of metropolitan farms, and 9-12 percent of metropolitan acreage operated. I contend that the potential staying power of any of these urban farms will depend a great deal on public understanding of the issue, and a constructive planning dialogue between rural and urban leaders and policy makers. There are examples of states and cities that are trying to ensure a win-win situation for urban agriculture, and much more of this is needed.

Ecotourism is defined as "travel and recreation to natural areas that is intended to contribute to the areas' conservation and enhancement (US EPA, 2002) and it is the fastest growing segment of the U.S. travel industry. It frequently occurs in association with agriculture. The Economic Research Service estimates that the total contribution of the USDA CRP (Conservation Reserve Program) acreage to freshwater-based recreation is over 35 million dollars; pheasant hunting over 80 million dollars; and wildlife and/or bird life viewing in association with CRP cropland, forestland, pasture and rangeland may be worth 380 million dollars to the nation (Executive Office of the President, 2000).

Planning healthy communities

Planners could make a major contribution to strengthening agricultural and food system entrepreneurship. However, a study of city planning agencies in 22 U. S. communities indicated that planners had relatively little interest in the food system arena. Planners make little attempt to incorporate the food and agriculture system into comprehensive planning. There is little reference to this issue in scholarly documents to which professional planners contribute, and an absence of attention to the topic in planning classrooms (Pothukuchi and Kaufman, 2000).

However, a study by Kaufman and Bailkey (2000) of entrepreneurial urban agriculture in major U.S. cities presented a strong case for incorporating urban agriculture into city comprehensive land-use plans. The study documents the value of amending city zoning ordinances to allow urban agriculture as a permitted or conditional use in residential areas where land is not heavily contaminated, and the integration of agriculture into cities' open space strategies. This investigation confirmed the fact that urban agriculture is on the increase. Agriculture in all of its diversity can and should be an integral part of a city's revitalization. On the other hand, the idea of producing food crops in urban areas is still foreign to most people who still view it as a rural activity. Although local government officials do not see urban agriculture as the "highest and best use" of vacant inner city land, there are "pockets of support" for market-oriented urban food ventures among all levels of government officials, non-profit organizations and local foundation staff.

Agriculture can contribute to well planned, attractive and livable communities. Community gardens encourage people to share responsibilities and to socialize together. Feenstra's (1999) work in California showed that community gardens enhance neighborhood trust and cohesion, decrease racial discrimination, increase the numbers and quality of neighborhood associations, enhance civic participation, and connect individuals that may not normally interact. Community participation in tree planting and maintenance contributes to the trees' survival, and it strengthens residents' sense of community and their perceived ability to control their own neighborhoods (Ames, 1980). Planted landscapes in public housing developments foster improved human associations, and are linked with less aggression and violence, and improved parent-child relationships. When older adults are able to spend time outdoors they seem to get along better with others in the community, and gain a sense of place (Kuo and Sullivan, 2001). Appropriate planning and landscape design can moderate and manage traffic, increase pedestrian safety, and reduce community crime. Landscaped circles and speed control devices can slow traffic, and help neighborhoods take control of their streets.

Opportunities for Agriculture to Bridge the Rural-Urban Gap

This is an ideal time to broaden our perceptions of agriculture and to tap its potential in bridging the gap between rural and urban areas. Agriculture is, and has always, been an integral part of rural and urban lifestyles, economies and environments, however it has become separated in the minds of the public and of political leaders. National trends toward urbanization, consumers' interest in higher quality, locally-produced food items, and the need for a win-win situation for all communities are some of the reasons to suggest that we should pay attention to this opportunity.

In closing I will propose two particular program and/or policy areas around which actions might be targeted if we are to strengthen rural – urban connections.

Bring Diverse Interests Together

There is a great deal of separation across rural and urban interest groups, and among the many different agricultural interest groups. This separation is not only spatial and temporal, but in many cases, their interests are functionally different as well. Agency leaders may be focused on environmental regulatory processes; farmers on earning sufficient profit to stay in business; and customers on procuring high quality, safe food that is readily accessible. Farmers who producing for export want dependable overseas buyers, while farmers near metropolitan areas may be more concerned about the demands of local restaurant owners, and attracting families for weekend recreation. While long overdue, farmers and urban customers are beginning to acknowledge the value of listening to, and learning from each other.

Each of these parties has access to particular products and resources valued by the other. Rural and urban interests compete for financial resources and political power, yet each is dependent on the other for goods and services, economic support, recreation and other amenities. Rural policy makers are searching for ways to boost the local economy through job development, promoting rural amenities, and maintaining local control. Urban leaders are faced with the impacts of uncontrolled growth, traffic congestion, inner-city deterioration and residential out-migration.

Another element that needs attention concerns the increased number of ethnically diverse residents that can now be found in both rural and urban areas. Much of the growth in nonmetropolitan areas can be attributed to minority migration, many of whom represent younger age groups. The same is true for metropolitan areas. While this phenomenon poses new challenges, it also opens up new opportunities for rural-urban collaboration, human capital development, agricultural entrepreneurship, and can stimulate attractive cultural amenities that can make a community unique.

How can we bring together some of these disparate interests around mutual concerns and needs? Often stereotypes, and the fear of the unknown, are the biggest obstacles to making new friends. Those of us in agriculture have typically seen the rural community as our bailiwick, however it is apparent that the problems faced by metropolitan areas could benefit from our knowledge and expertise. On a recent visit to several national urban organizations, and several others with rural interests, I learned that most were a bit mystified as to why they should view rural-urban partnerships as a win-win opportunity. Some of this attitude was clearly based on perceived differences in values associated with the causes of urban or rural problems (water quality, confinement agriculture, sprawl, conservation, etc.), but the greater cause was the simple fact that there had been no efforts made to broaden the conversation. Agriculture could beone of the vehicles to bring these “sides” together through resource sharing, team approaches to problem solving, joint feasibility studies, shared investments and collaborative technology development and research. Programs and policies to encourage this connection cannot come from the top. They need to be locally and regionally initiated, and must include open and flexible participation at every level.

Implement Policy and Institutional Change

Whether we like it or not, the future of rural areas, and of agriculture, is tied to urban areas. Rural and agricultural life is embedded in the fabric of urban society. Metropolitan agriculture creates wealth, revitalizes communities, conserves and protects local ecologies, provides attractive goods and services, and generally, serves as a point of connection for both urban and rural communities (Lapping and Pfeffer, 2000). Urban people have much to lose if rural and agricultural amenities disappear, as do rural people have much to lose if metropolitan emenities disappear. Some of the goods and services that we value include high quality, inexpensive, and accessible food, scenic open space, outdoor recreation and tourism, relationships with the landscape, and a cultural heritage that has shaped our work ethic, our cultural values, and our views of ourselves.

Imaginative regional policies can help to protect the land base of agriculture, and to promote the economic viability of agriculture so that we can all benefit from this resource. There will be need for incentives to support rural and agricultural amenities --- flexible zoning, regulations that favor land conservation, encouragement for agricultural entrepreneurship, enforcement of right-to-farm laws, support for alternative direct market systems, trusts to protect large land areas, and encouragement for business development (Lapping and Pfeffer, 2000).

State and national policy will need to address the integration of agriculture systems into metropolitan areas, and the interdependency between rural and urban areas. Some of the issues that need attention include regional food systems, land use, agricultural entrepreneurship, human capital development and new generation farmers. Policy must encourage a new generation of urban agriculturists that can envision a type of agriculture that appeals to the urban public at the same time a ensures a reasonable living. These new farmers must be able to interact with urban political leaders, urban interest groups, food customers, the urban business sector, and leaders of other urban organizations.

Education can play a major role. There will be increasing needs for secondary schools that address this "new agriculture" in urban areas, and in rural regions as well. Planning for this type of learning must be done through rural – urban partnerships, resource sharing, and with the participation of young people, farmers, and others who are part of the metropolitan and rural agricultural system. There are wonderful opportunities to create programs for urban and rural young people who are interested in careers in agricultural entrepreneurship, agricultural and food system planning, and environmental horticultural. The urban agricultural science programs at Walter Biddle Saul High School for Agricultural Sciences (Philadelphia) and the Chicago High School for Agricultural Sciences are excellent examples of what can be done.

College and university curricula will benefit from revisions to address the interdependency between rural and urban areas through agriculture. This will call for more interdisciplinary, systems-oriented learning approaches with more emphasis on the rural-urban agroecosystem. The modification of curricula will benefit from a collaborative approach that involves urban planners, urban marketing entrepreneurs, consumer advocates, and other urban interest groups, and the cooperation of rural development centers and land-grant universities with urban colleges and universities. Research opportunities need to be clearly articulated to ensure there is science-based information to assist with the integration of agriculture into urban areas, and to support the common interests of rural and urban people. Some of the topics worthy of consideration include diversified cropping and landscape systems, plant adaptability to urban environments, urban soils, water management, biocontrol of insects, wildlife management, public support of agriculture's new roles in urban areas, and the economic contributions of metropolitan agriculture.

Conclusions

Rural and urban areas have always been deeply intertwined. While this interdependency still exists, it is less evident in the minds of the general public and political leadership. In part, this may be due to the competition for resources between interests perceived as 'urban,' and those perceived as 'rural', and because people who have little to do with agriculture are now the majority of rural residents. Actual numbers of farmers are diminishing, and there is every indication that a good number of the farmers of the future will be part-time, of Hispanic or other immigrant background, and female. With the apparent growth of entrepreneurial agriculture in metropolitan areas, and customers' interest in "connecting" with "their farmers," there is every reason to believe that metropolitan agriculture may have a promising future – providing urban and rural areas can work out their differences and begin to work together. A win-win situation for agriculture in both rural and urban areas will depend on supportive national and state policies, but especially on regional planning processes that incorporate both of these into future comprehensive planning. Agricultural knowledge with a more innovative twist directed at future realities can serve as a tool to create a win-win situation for the total rural – urban agroecosystem.

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